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**North Dakota Department of Agriculture  
Cooperative  
Weed Management Plan**

January 2004

## *A Message from the Commissioner*

I am pleased to present the *North Dakota Department of Agriculture Cooperative Weed Management Plan*. This strategic plan was developed as a framework for cooperative and coordinated noxious weed management across North Dakota's landscape of public and private lands. The cooperative weed management concept allows public and private entities to share resources in controlling noxious weeds. This plan brings together the ideas, suggestions, and knowledge of private landowners, public land managers, resource professionals, and scientists for affecting a successful statewide effort to manage noxious weeds.

A comprehensive weed management plan is vital as invasive and noxious weeds cost North Dakota millions of dollars annually. In addition to the direct damage to crops and forage, noxious weeds adversely affect rural and urban land values and tax revenues. They blight our environment, and they degrade wildlife habitat, recreation and the prairie landscape. That concerns us all.

As laws and regulations change, we publish *North Dakota's Noxious Weed Law and Regulations* to inform county weed boards, weed officers, landowners, public land managers and others of recent changes in the law and to help them understand the legal basis for the efforts to control or eradicate noxious weeds.

Twelve weed pests have been designated *noxious* because they pose serious threats to agriculture and the environment. They are absinth wormwood, Canada thistle, Dalmatian toadflax, diffuse knapweed, field bindweed, leafy spurge, musk thistle, purple loosestrife, Russian knapweed, spotted knapweed, and saltcedar.

Landowners, private citizens, and state and federal government agencies cooperating as partners can make the fight against noxious weeds a success.

Sincerely,

/s/

Roger Johnson  
Agriculture Commissioner

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## Executive Summary

This strategic plan provides North Dakota's citizens, private landowners, public agencies, businesses, non-governmental organizations and elected officials with a framework for the implementation of successful and cost-effective weed management efforts across the state that will protect the natural resources upon which North Dakotans depend for their livelihoods, culture and recreation. Without a strong and well-coordinated effort, North Dakota may lose the opportunity to stop the spread of invasive weeds and prevent the ecological and economic losses so clearly apparent in other western states. This plan will help to guide a statewide, coordinated effort to manage weeds successfully now and into the future so that such negative impacts can be avoided or mitigated.

To make this vision a reality, we have developed a mission statement that will guide our efforts to control invasive weeds, allocate resources efficiently and set specific and appropriate goals/objectives for North Dakota's public and private landowners, businesses and non-governmental organizations. Our partners have agreed that the most appropriate mission toward which our collective noxious weed control efforts will be directed is:

***To stop the spread and introduction of noxious and new invasive weed species in North Dakota.***

In order to carry out this mission successfully, North Dakota's cooperative weed management plan identifies numerous goals, in no particular order, that must be met. We must:

- 1. Prevent the introduction, reproduction and spread of designated noxious and invasive non-native plants into North Dakota;**
- 2. Develop cooperative weed management partnerships with public and private partners to attack shared weed problems;**
- 3. Implement the most effective, economical and environmentally appropriate weed control methods for the target weeds;**
- 4. Implement an early detection and rapid response system, this will include mapping and control of infestations;**
- 5. Reduce the extent and density of established weed infestations to point that economic and environmental impacts are minimized or eliminated;**
- 6. Educate and inform the public, private landowners, public land managers and decision makers about invasive weeds and their economic and environmental impacts;**
- 7. Coordinate and standardize the mapping of infestations of all noxious and invasive weeds in North Dakota, and develop and maintain a database of noxious and invasive weed infestations;**
- 8. Seek voluntary compliance with North Dakota weed laws. When necessary, apply enforcement of these laws in a fair and consistent manner; and**
- 9. Develop a system to determine the invasiveness of weeds in North Dakota.**

This strategic plan describes a vision for North Dakota's future and provides a clear process for prioritizing and allocating resources for education, management, research and other efforts that will be necessary to meet our goals in a cost-effective and timely manner. However, this plan is not the end of our weed management efforts; it is only the beginning of a more coordinated and effective statewide effort to stop the spread of weeds. With a well-orchestrated effort to engage the public, coordinate management efforts across North Dakota's mosaic of public and private lands and develop new tools and technologies to control noxious weeds, species such as saltcedar, purple loosestrife, Dalmatian toadflax and the knapweeds can be stopped before they irreversibly damage what we value as North Dakotans (including productive agriculture, a healthy environment, numerous recreational opportunities, a sound economy and secure public health).

## **Setting the Stage – A Case for Coordinated, Statewide Action**

### **What are noxious weeds and why manage them?**

“Noxious weed”, is a legally defined term that, means any plant propagated by either seed or vegetative parts which is determined by the commissioner after consulting with the North Dakota State University Extension Service, or a county weed board after consulting with the county extension agent, to be injurious to public health, crops, livestock, land, or other property.

North Dakota’s 12 state-designated noxious weed species include absinth wormwood, Canada thistle, Dalmatian toadflax, diffuse knapweed, field bindweed, leafy spurge, musk thistle, purple loosestrife, Russian knapweed, saltcedar, spotted knapweed, and yellow starthistle. These noxious weed species are commonly recognized to harm North Dakota’s agriculture, environment and/or public health. Noxious weeds can have substantial and dramatic short and long-term effects upon North Dakota’s citizens and our exceptional quality of life. To protect our abundant natural resources from irreparable harm and prevent weeds from causing unacceptable damage to North Dakota’s economy, agricultural industries, unique natural heritage, diverse recreational opportunities, public health and scenic beauty, all local governments now require public and private landowners to manage noxious weeds.

### **Why invest in noxious weed management *now*?**

When a new weed species is first noticed on a typical North Dakota property, the landowner’s reaction is often one of benign neglect. S/he reasons that small patches of weeds are not a concern because they are clearly not causing noticeable damage. Rather than address the problem while it is still small, manageable and inexpensive, the landowner typically waits until the patch has grown considerably in size before commencing any effort to control the weed. As a result, control efforts often come too late to be cost-effective or even successful.

So North Dakota’s decision-makers and citizens are faced with a simple choice. We can:

- (a) Invest now in a coordinated, statewide weed management effort, at a relatively low cost, to ensure a healthy and productive future that maintains our economy, helps to assure that agriculture remains productive, protects our unique natural heritage and environment, and sustains our high quality of life; or
- (b) Allow North Dakota’s noxious weed populations to spread beyond their current distribution until they affect the majority of North Dakota’s citizens and industries (perhaps as early as 2020) and require the expenditure of substantially greater resources simply to mitigate impacts to our economy and environment that are now foreseeable and avoidable.

This strategic plan clearly represents an investment in our future rather than a delayed response to a developing problem. Like all good investments, the sooner it is made, the less expensive it will be to make and the more quickly its benefits will accrue. This plan provides a framework for a coordinated, statewide effort to stop the spread of noxious and invasive weeds so that North

Dakotans may continue to enjoy all of the benefits we derive from healthy and productive agricultural and natural ecosystems.

### **Why is a statewide strategic plan necessary?**

The fundamental purpose of this strategic plan is to provide a framework for a coordinated, statewide effort to manage noxious weeds successfully now and into the future. It describes a shared vision for North Dakota's future and identifies the goals that must be met to make this vision a reality. It also provides a framework for prioritizing and allocating resources for education, management, research and other efforts that will be necessary to meet these goals in a cost-effective and timely manner. Although some difference of opinion exists regarding how to control specific species or even which species should be controlled first, this plan will help agencies, communities, organizations and individuals across the state focus their efforts, individually and collectively, upon species which there is no doubt regarding the need for management. Consequently, the variety of efforts around North Dakota will become more complementary as well as cost-effective.

Aside from the obvious benefits that will go to individual private landowners, local governments and state and federal land management agencies that contribute to a cooperative and coordinated effort, there are a variety of reasons for developing and adopting a statewide strategic plan:

**Fiscal:** Weed management can be an expensive task for any landowner. This strategic plan will help local governments and public land management agencies to identify appropriate weed management objectives for every part of the state based upon objective criteria and sound weed science and management principles. In the short and long-term, this will help ensure that resources for weed management are appropriately focussed on the species and resources that matter most to a landowner, a community or branches of government. For decision-makers responsible for the appropriate use of public funds, this plan will provide specific opportunities and guidance to ensure that allocated resources are expended efficiently and effectively. Furthermore, in a world of limited financial and technical resources (at all levels, both public and private), the State of North Dakota and its subdivisions must help provide the means by which all landowners can achieve weed management objectives in more cost-effective ways. By facilitating additional opportunities for collaboration among public and private landowners, this plan will help to enhance resource-sharing and cost-effectiveness.

**Political:** As outlined above, noxious weeds negatively affect the natural resources and values (e.g., productive agriculture, a healthy environment, secure public health) of our society. To prevent unacceptable and irreparable impacts to these values, this plan helps to ensure that weed management resources are dedicated to protecting or enhancing such values while minimizing opportunities to squander resources on unproductive efforts that will yield little benefit to North Dakota's citizens and communities. The plan also provides a framework for prioritizing our control efforts across the state so that decision-makers (elected or otherwise) will better understand how and when they can contribute resources to ensure such efforts are successful.

**Social:** Successful implementation of this strategic plan will help assure that landowners across the state support the goals of local, state and federal weed management programs. It will also guarantee that they have a voice in shaping the decisions that affect their lands and protect the values they and their communities hold. For public and private land managers, the plan provides a roadmap that clarifies what actions are necessary for specific parcels and areas of the state to ensure all landowners are treated equally. For adjacent neighbors (landowners or counties), it will promote efforts that are consistent and complementary across the local landscape, thus lowering the cost of weed control for everyone.

**Legal:** The North Dakota Noxious Weed Law (N.D.C.C. 63-01.1) imposes stewardship obligations upon local governing bodies (counties and municipalities) as well as public and private landowners throughout the state. Implementation of this plan will help each landowner to identify and meet his/her legal obligations. It will also facilitate the equitable assignment of responsibility for every landowner, public or private, based upon objective criteria that span local, state and federal jurisdictions.

Without the focus and direction that a statewide, strategic plan can provide, it is unlikely that local, regional or statewide weed management efforts will succeed. Certainly, regional and statewide efforts cannot succeed without the coordinated efforts of the communities that comprise much larger landscapes. And although local efforts may temporarily succeed at achieving their objectives, the failure of neighboring communities to make equally successful strides forward will doom even the most successful local effort to long-term failure as it is deluged with weeds invading from surrounding communities. Consequently, it is essential for all North Dakota communities and landowners to work toward common weed control objectives if we are to succeed at our individual and collective goals.

The strategic plan described in the following pages is the product of the contributions of many individuals and organizations throughout our state. It provides a collective vision for our future and identifies the goals that must be met to protect and restore North Dakota's productive agricultural lands and natural ecosystems. It also provides a framework for prioritizing action and directing resources efficiently. In short, it endeavors to provide North Dakotans with the quickest means to achieve our shared weed control objectives, protect our society's values and promote the most cost-effective solutions to our weed management challenges. That is not to say that weed management will be inexpensive and simple. However, implementation of this plan will help to insure that all of our efforts throughout North Dakota are focused upon our shared goals and objectives.



## **Developing an Appropriate Vision and Mission for North Dakota's Weed Management Efforts**

Any publicly funded effort to manage noxious weeds must meet the needs of North Dakota's citizens, protect society's values and ensure that it is cost-effective, accountable and successful. Consequently, North Dakota's municipal, county, state and federal weed management efforts should share a common vision of how their weed management efforts, singularly and collectively, will contribute to the advancement and preservation of the values (e.g., productive and sustainable agriculture, conservation of the state's unique natural heritage, numerous and diverse recreational opportunities, secure public health) held by North Dakota's citizens. Furthermore, if North Dakota's numerous local governing bodies, private landowners and public agencies are to manage noxious weeds successfully, management efforts must be coordinated across jurisdictional boundaries to promote cost-effective solutions to shared concerns and problems. A common vision of the purpose of our endeavors and their desired results will facilitate such cooperation and enhance opportunities to collaborate and share resources to meet the needs of the public and protect the values of our society.

As mentioned before, our mission is:

***To stop the spread and introduction of noxious and new invasive weed species in North Dakota.***

This mission will be the primary focus and purpose toward which public and private weed management efforts and resources are directed throughout North Dakota. Consequently, this plan must provide the most cost-effective means to achieve the mission and help shape a future that protects agricultural productivity and environmental health. There are undoubtedly numerous paths to the same outcome. Our challenge is to adopt and implement strategies that will help us to make our mission a reality and effectively address the most significant obstacles to effective weed management efforts. As outlined further below, this strategic plan will help our partners and all landowners, public and private, to:

1. Overcome obstacles that prevent effective and well-coordinated weed management efforts;

Weed management efforts are often confounded by the presence of numerous noxious weed species that differ in a variety of ways. These species differ in their distributions across the state, the effects they have upon agriculture and the environment as well as public health, and the techniques that are available and effective to manage them. Furthermore, individuals and organizations may disagree about the control techniques that should be used to address noxious weed problems or the extent to which a species should be controlled. In addition, a lack of communication and shared weed management priorities often results in uncoordinated and inconsistent actions, even within the same organization or community. Also, we often fail to take advantage of short-lived opportunities to prevent or eradicate species, resulting in the establishment of permanent populations that are costly to control. In fact, many public and private landowners too frequently devote resources to areas with the greatest infestations instead of protecting agricultural and natural lands that are still uninfested.

2. Utilize the most cost-effective means to stop the spread of weeds; and

Resources for weed management will always be limited to some extent. Consequently, allocated resources must always be used to the greatest effect possible in a variety of ways including prevention, on-the-ground management, education and research. Furthermore, all possible weed management activities should be prioritized so that as new resources become available, they can quickly be directed to the most effective use in North Dakota.

3. Ensure that resources allocated to weed management efforts are used specifically to protect agricultural productivity, environmental health and other values (e.g., abundant recreational opportunities and secure public health) held by North Dakota's citizens.

Weed management protects our society's values and the productive uses to which we put both public and private lands. It is imperative that weed management efforts continue to protect:

- a) Agricultural areas of high productivity, for both crops and livestock;
- b) Natural areas of high environmental value (e.g., lands that support North Dakota's unique natural heritage including endemic plant/animal species and critical wildlife habitat); and
- c) Public health, opportunities for recreation (passive and active) and other factors that contribute to North Dakota's exceptional quality of life.

Most importantly, North Dakota's weed management strategy must provide opportunities for every landowner, local government, organization and public agency to target their individual efforts and resources in ways that are complementary to those of others – so that neighbors work with one another and public interest groups and other non-governmental organizations work together to carry similar messages to a variety of different audiences. Weed management must be simplified so that every community can set specific expectations and management objectives for its landowners, both public and private, regarding noxious weeds; then help each landowner to meet such expectations whether management requires eradication, containment or simple suppression. Such efforts will help to ensure that North Dakota anticipates, creates and takes advantage of opportunities to eradicate newly introduced species quickly and efficiently at the appropriate levels (local, regional or statewide) while meeting the needs of its citizens to address well-established and persistent problem weed species that do not merit such intensive management efforts.

## **Developing a Strategy to Accomplish Our Mission – Setting and Accomplishing Our Goals**

In recent years, Dr. Steven Dewey, a professor of weed science at Utah State University, has developed and refined a weed management model based upon the successful and efficient fire-fighting practices conducted annually in the western United States. In general, fire-fighting practices in the West emphasize the containment of the “core” area of a blaze combined with crucial efforts to detect and extinguish spot-fires that spring up outside the containment perimeter. Similarly, Dr. Dewey proposes that weed management efforts should focus on containing significant noxious weed infestations while vigorously eradicating newer “satellite” populations that spring up beyond the boundaries of the original infestations (for additional information, visit <http://extension.usu.edu/publica/agpubs/wildfire.pdf>).

Dr. Dewey’s weed management model is now well accepted by most professional weed managers and public land management agencies as well as increasing numbers of private landowners with substantial landholdings. By incorporating the fundamental concepts of Dr. Dewey’s model into a comprehensive weed management strategy for North Dakota, we can achieve our mission in a cost-effective manner. Therefore, to stop the spread of noxious weeds in North Dakota and restore valuable agricultural and environmental lands, North Dakota’s cooperative weed management plan outlines numerous goals, that we must meet. Each goal’s description includes what has been done and what needs to be done. We must:

### **1. Prevent the introduction, reproduction and spread of designated noxious and invasive, non-native plants in North Dakota.**

- The Weed Free Forage program addresses the problem of forage used on Federal and State lands to be free of noxious and invasive weeds. There is a need to study the use/requirement for only certified weed free mulch to be used in road and highway construction, pipelines and other activities which require mulch to prevent erosion and nurture replacement vegetation seedlings.
- Seed used for agriculture and natural area plantings to permanent vegetation can be an avenue by which new, invasive weeds are introduced into ND. ND Seed Laws need to be strengthened and enforced to prevent contaminated seed imported from states and countries which have invasive weeds, such as yellow starthistle, from being introduced, sold and planted in ND.
- Encourage and support the use of clean, certified North Dakota grown grass and legume seed for all permanent vegetation establishments such as hayland, CRP, road right-of-ways, and natural areas. Encourage the purchasing of seed grown in ND or from reputable sources to minimize the introduction of new weed problems.

### **2. Develop cooperative weed management partnerships with public and private partners to attack shared weed problems.**

- Partnerships should involve individuals and agencies/organizations to prioritize and pool their limited resources in controlling noxious and invasive weeds in a designated work plan.

- Partnerships allow management across ownership and jurisdictional boundaries and would allow joint application for grant funding from local, regional and national funding sources.

**3. Implement the most effective, economical and environmentally appropriate weed control methods for the target weeds.**

- Continue to support and expand the biological control program. Continue to support local bio-control insect collection field days, informational meetings, tours and workshops. Investigate possible exchanges of leafy spurge bio-control insects for knapweed, purple loosestrife and other noxious weed bio-control agents.
- Encourage counties to require cost-share participants to furnish accurate maps of the targeted weed locations to receive herbicide. Encourage counties to provide cost-share herbicides that are safe and appropriate for the vegetation mix, soil type and water table of infested areas to be treated.

**4. Implement an early detection and rapid response system, this will include mapping and control of infestations.**

- Global Positioning units are available for distribution to county and city weed boards who are willing to participate in mapping their new invasive weeds.
- Early detection is crucial to success in a weed management program. Small, newly establishing weed sites are easier to control, both economically and environmentally, than large, established infestations. Weed managers must react quickly and decisively in treating new noxious and invasive weed populations while they are small in area and have not developed extensive, mature root systems.
- Mapping of weed infestations is important as a measure of control success or failure, speed of establishment, and movement of weeds. Mapping can also be used in budget planning. With the acreages known, managers can plan for labor, equipment, herbicide and time required to treat weed areas. Maps are important for new employees and others so they can quickly and easily find the currently known infestations and to treat them or to monitor previous treatment success.
- Mapping, whether using GPS methods or hand mapping on paper maps, should be done in accordance with the standards developed and adopted by the North American Weed Management Association (NAWMA), the NAWMA website is: [www.nawma.org](http://www.nawma.org). The use of these standards is crucial; they will allow the sharing of weed infestation information across geographic and jurisdictional lines.

**5. Reduce the extent and density of established weed infestation to a point that economic and environmental impacts are minimized or eliminated.**

- Total eradication of large established weed infestations may be impossible. The objective of the weed manager should be to reduce density and impact and to contain the infestation with a sustained, consistent program of control.

- A long-term plan must be designed and followed which uses the most cost-effective measures over a sustained period of time for each weed in a management area. A single treatment of an area is very seldom, if ever, effective. The plan should target an area for an extended period of time until the density or acreage goals are achieved.
- Weed managers should include all landowners and land managers in the target area in the development of the short and long-term plan for controlling noxious and invasive weeds. Cooperative, coordinated efforts will accomplish more effective control over the target areas.

**6. Educate and inform the public, private landowners, public land managers and decision makers about invasive and noxious weeds and their economic and environmental impacts.**

- Develop and distribute quality brochures and fact sheets on identification, impacts and control methods.
- Organize field days, tours and demonstrations relating to all aspects of noxious and invasive weed management.
- Be available to speak to groups about the impacts of noxious and invasive weeds and their control methods.
- Develop a quarterly newsletter to be distributed to all weed boards and weed managers in North Dakota.
- Continue to sponsor weed managers to attend the Western Society of Weed Science - Noxious Weed Short course.
- Target youth audiences through science and ag classes as well as camps, conventions, 4-H and FFA, scouting and sports organizations. Develop publications and lesson plans for use by weed managers, teachers and leaders in teaching noxious and invasive weed impacts and management.
- Continued communications between local, state, and federal land managers.

**7. Coordinate and standardize the mapping of infestations of all noxious and invasive weeds in North Dakota, and develop and maintain a database of noxious and invasive weed infestations.**

- Currently there are 44 county and city weed boards that have received GPS units to mark weed infestation locations, these units were provided by the ND Department of Agriculture to assist in attaining more accurate records of weed populations in the state.
- A central database of mapping information of noxious and invasive weeds will allow for more accurate tracking of changes of individual weed's area of infestation and density of infestation.
- Accumulated data would be easily available to legislators, weed management working groups, and others who could make decisions based upon accurate, uniformly reported information.
- As mentioned in number 4, the mapping standards of NAWMA will be followed. These standards are intended to be the minimum, so that all information will be compatible.

**8. Seek voluntary compliance with the North Dakota Weed Law. When necessary, apply enforcement of these laws in a fair and consistent manner.**

- Education about noxious and invasive weeds and their impacts is the first line of enforcement of the ND Noxious Weed Laws. Weed officers, weed boards and the people they interact with on noxious weed matters must all have a clear, working knowledge of the laws.
- The ND Department of Agriculture will conduct an annual weed officer training, of which a section will cover enforcement, to prepare and train weed officers to use different techniques and programs in an attempt to resolve enforcement situations in the least confrontational manner possible.
- Weed officers and weed boards should consult with their respective county states attorney with matters pertaining to enforcement actions.

**9. Develop a system to determine the invasiveness of weeds in North Dakota to aid in the decision making process of adding to or deleting from the state noxious list.**

- A system will be developed to aid in the process of determining if a weed should be added to or deleted from the North Dakota Noxious Weed list. This system will use many factors to aid in the determination process, some of which are: is this plant native to North Dakota, is this plant native to the U.S., is this plant on border states' noxious list, how aggressive is this plant, etc. All of these questions are vital in determining whether a specific plant should be considered for 'noxious' status.
- Prior to adding or deleting weeds, the Commissioner of Agriculture shall consult with North Dakota Extension Service.

A statewide weed management strategy based upon these goals will offer every landowner and public land manager in North Dakota a common framework with which to prioritize their weed management efforts so that individual, community and regional efforts are compatible and complementary across jurisdictional and property boundaries rather than inconsistent and excessively costly. Our partners in the public and private sectors agree that these goals must be met if we hope to stop the spread of noxious weed species in North Dakota. As a means to focus our individual and collective efforts, North Dakota's strategic plan will provide a framework with which to identify specific objectives and prioritized actions that can be carried out cost-effectively to achieve each goal. It will also help to ensure that every facet of weed management, including education and research, contributes directly to achieving each of these four goals.

## Summary and Conclusions

This strategic plan provides North Dakota's citizens, private landowners, public agencies, businesses, non-governmental organizations and elected officials with a framework for the implementation of successful and cost-effective weed management efforts across the state; efforts that will protect the natural resources upon which North Dakotans depend for their livelihoods, culture and recreation. Without a vigorous and well-coordinated effort, North Dakota will lose its opportunity to stop the spread of noxious weeds and prevent the ecological and economic losses so clearly apparent in other western states. This plan will help to guide a statewide, coordinated effort to manage weeds successfully now and into the future so that such negative impacts can be avoided or mitigated. However, North Dakota's citizens are at a crossroads. Our fight to win the "war on weeds" may well be won or lost by 2020 – within a single generation; so we must act now.

As described in the previous pages, this plan articulates a vision for North Dakota's future and provides a clear process for prioritizing and allocating resources for education, management, research and other efforts that will be necessary to meet our weed management goals in a cost-effective and timely manner. However, this plan is not the end of our weed management efforts; it is only the beginning of a more coordinated and efficient statewide effort to stop the spread of noxious weeds. With a well-orchestrated effort to engage the public, coordinate management efforts across North Dakota's mosaic of public and private lands, and develop new tools and technologies to control noxious weeds, species such as purple loosestrife, saltcedar, yellow toadflax and Canada thistle can be stopped before they irreparably damage what we value as North Dakotans (e.g., productive agriculture, a healthy environment, numerous recreational opportunities, a sound economy and secure public health).

While this effort will help to ensure that our allocated resources are used efficiently, stretching our dollars alone will not resolve this problem. Additional funding is essential to the successful implementation of the plan on private and public lands. While there is an important role for soft funding sources, stable funding will be necessary to ensure that public and private landowners have what is necessary to achieve our objectives and preserve the values of North Dakotans far into the future. Furthermore, there is a critical need to reach the private landowners that own and manage two-thirds of the state. Although our endorsing partners include numerous organizations that represent the interests of diverse groups of landowners, it is imperative that efforts be made to reach out directly to the landowners themselves through a variety of communication and education tools. Involving private landowners more directly in our efforts will help to insure that actions initiated via the strategic plan have been well considered and retain the support and participation of all affected landowners.

Lastly, it is important to review the strategic plan periodically for its achievements and failures so that we can learn from experience and improve this plan for our continued success. Such a process will help to incorporate improved scientific knowledge and more advanced understandings of the impacts and management of noxious weeds in North Dakota and the West. As the weed populations in North Dakota shift and change, so too should our efforts. In so doing, perhaps we will be nimble enough to finally outmaneuver our adversaries, the noxious weeds.